AMENDMENTS TO THE SPECIFICATION

Amend the specification by inserting before the first line the sentence:

This is a divisional of Application No. 09/727,769, filed December 4, 2000, (now allowed), which is a Continuation-In-Part Application of U.S. Application No. 09/324,910, filed June 3, 1999, (now U.S. Patent No. 6,251,651); the above noted prior applications are all hereby incorporated by reference.

Please replace the second full paragraph at page 13, with the following rewritten paragraph:

(4) A polypeptide which comprises a polypeptide having an activity to deamidate amido groups in protein and having the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing, wherein one or more of amino acid residues of the amino acid sequence may be modified by at least one of deletion, addition, insertion and substitution.

Please replace the third full paragraph at page 13, with the following rewritten paragraph:

(5) A polypeptide which comprises a polypeptide having the amino acid sequence of ~~SEQUENCE NO. 6~~ SEQ ID NO:6 shown in the Sequence Listing.

Please replace the last full paragraph beginning at page 13, bridging to Page 14 with the following rewritten paragraph:

(8) A nucleotide which comprises a nucleotide being selected from the following nucleotides (a) to (g) and encoding a polypeptide having an activity to deamidate amido groups in protein;

(a) a nucleotide which encode a polypeptide having the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing,

(b) a nucleotide which encodes a polypeptide having the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing, wherein one or more amino acid residues of the amino acid sequence are modified by at least one of deletion, addition, insertion and substitution,

(c) a nucleotide which has the nucleotide sequence of ~~SEQUENCE NO. 5~~SEQ ID NO:5 shown in the Sequence Listing,

(d) a nucleotide which has the nucleotide sequence of ~~SEQUENCE NO. 5~~SEQ ID NO:5 shown in the Sequence Listing, wherein one or more bases of the nucleotide sequence are modified by at least one of deletion, addition, insertion and substitution,

(e) a nucleotide which hybridizes with any one of the aforementioned nucleotides (a) to (d) under a stringent condition,

(f) a nucleotide which has homology with any one of the aforementioned nucleotides (a) to (d), and

(g) a nucleotide which is degenerate with respect to any one of the aforementioned nucleotides (a) to (f).

Please replace the second to last full paragraph at page 14, with the following rewritten paragraph:

(9) A nucleotide which comprises a nucleotide encoding a polypeptide having the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing.

Please replace the first full paragraph at page 43, with the following rewritten paragraph:

Regarding the protein-deamidating enzyme of the invention, all of the protein-deamidating enzymes which can be obtained by the protein-deamidating enzyme production processs are included (i.e., allelic mutants and allelic variants are included), in which particularly preferred one is a polypeptide which has the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing attached, wherein one or more of amino acid residues of the amino acid sequence may be modified by at least one of deletion, addition, insertion and substitution, and more preferred one is a polypeptide which has the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing.

Please replace the last full paragraph beginning at page 44, bridging to page 45, with the following rewritten paragraph:

A nucleotide which comprises a nucleotide selected from the following nucleotides (a) to (g) and which encodes a polypeptide having the activity to deamidate amido groups in protein;

(a) a nucleotide which encode a polypeptide having the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing,

(b) a nucleotide which encode a polypeptide having the amino acid sequence of ~~SEQUENCE NO. 6~~SEQ ID NO:6 shown in the Sequence Listing, wherein one or more of amino acid residues of the amino acid sequence are modified by at least one of deletion, addition, insertion and substitution,

(c) a nucleotide which has the nucleotide sequence of ~~SEQUENCE NO. 5~~SEQ ID NO:5 shown in the Sequence Listing,

(d) a nucleotide which has the nucleotide sequence of ~~SEQUENCE NO. 5~~SEQ ID NO:5 shown in the Sequence Listing, wherein one or more of bases of the nucleotide sequence are modified by at least one of deletion, addition, insertion and substitution,

(e) a nucleotide which hybridizes with any one of the above nucleotides (a) to (d) under a stringent condition,

(f) a nucleotide which has homology with any one of the above nucleotides (a) to (d), and

(g) a nucleotide which is degenerate with respect to any one of the above nucleotides (a) to (f).

Please replace the first full paragraph at page 47, with the following rewritten paragraph:

In Example 11 of this specification, a gene coding for the protein-deamidating enzyme was determined by the PCR method using *Chryseobacterium* sp. No. 9670. Complete nucleotide sequence of the gene coding for the protein-deamidating enzyme originated from *Chryseobacterium* sp. No. 9670 is shown in the ~~SEQUENCE NO. 5~~SEQ ID NO:5, and the

amino acid sequence encoded thereby was determined to be the sequence shown in the ~~SEQUENCE NO. 6~~SEQ ID NO:6. In this connection, there are countless nucleotide sequences which correspond to the amino acid sequence shown in the ~~SEQUENCE NO. 6~~SEQ ID NO:6, in addition to the nucleotide sequence shown in the ~~SEQUENCE NO. 5~~, and all of these sequences are included in the scope of the invention.

Please replace the last full paragraph at page 47, with the following rewritten paragraph:

The gene of interest can also be obtained by chemical synthesis based on the information of the amino acid sequence shown in the ~~SEQUENCE NO. 6~~SEQ ID NO:6 and the nucleotide sequence shown in the ~~SEQUENCE NO. 5~~SEQ ID NO:5 (cf., *Gene*, 60(1), 115 - 127 (1987)).

Please replace the last paragraph beginning at page 47, bridging to page 48, with the following rewritten paragraph:

Regarding the protein-deamidating enzyme gene of the invention, a nucleotide which encodes a polypeptide having the amino acid sequence shown in ~~SEQUENCE NO. 6~~SEQ ID NO:6, wherein one or more of amino acid residues of the amino acid sequence are modified by at least one of deletion, addition, insertion and substitution, a gene which hybridizes with the nucleotide under a stringent condition, a nucleotide which has homology with the nucleotide and a nucleotide which is degenerate with respective to the nucleotide are also included in the invention, with the proviso that the polypeptides encoded thereby have the protein-deamidating enzyme activity.

Please replace the last paragraph beginning at page 48, bridging to page 49, with the following rewritten paragraph:

By using the entire portion or a part of the protein-deamidating enzyme gene whose complete nucleotide sequence has been revealed making use of *Chryseobacterium* sp. No. 9670, as a probe for hybridization, DNA fragments having high homology with the protein-deamidating enzyme gene of ~~SEQUENCE NO. 5~~SEQ ID NO:5 can be selected from genomic DNA libraries or cDNA libraries of microorganisms capable of producing other protein-deamidating enzymes.

Please replace the entire subparagraph "b" at page 68, with the following rewritten subparagraph:

b) Determination of partial amino acid sequence

The purified protein-deamidating enzyme obtained in Example 3 was applied to a protein sequenser (mfd. by Applied Biosystems) to determine an N-terminal amino acid sequence of 20 residues shown in ~~SEQUENCE NO. 1~~SEQ ID NO:1. Next, the purified protein-deamidating enzyme obtained in Example 3 was reduced and alkylated using performic acid and then hydrolyzed with trypsin. The thus obtained hydrolysate was applied to a reverse phase liquid chromatography, and one of the separated peptide fractions was applied to the protein sequenser to determine an internal amino acid sequence of 20 residues shown in ~~SEQUENCE NO. 2~~SEQ ID NO:2.

~~SEQUENCE NO. 1~~SEQ ID NO:1:

Leu-Ala-Ser-Val-Ile-Pro-Asp-Val-Ala-Thr-Leu-Asn-SerLeu-Phe-Asn-Gln-Ile-Lys-Asn

~~SEQUENCE NO. 2~~SEQ ID NO:2:

Ser-Pro-Ser-Asn-Ser-Tyr-Leu-Tyr-Asp-Asn-Asn-Leu-IleAsn-Thr-Asn-Cys-Val-Leu-Thr

Please replace the entire subparagraph "c", beginning at page 68, bridging to page 69, with the following rewritten subparagraph:

c) Preparation of DNA probe by PCR

Based on the N-terminal region amino acid sequence and the internal amino acid sequence, the following two mixed oligonucleotides were synthesized using a DNA synthesizer (mfd. by Applied Biosystems) and used as PCR primers.

~~SEQUENCE NO. 3~~SEQ ID NO:3

Sense primer:

5' -GCI (TA) (CG) IGTIAT (TCA) CC (TACG) GA(TC) GT-3' <N-lg>

~~SEQUENCE NO. 4~~SEQ ID NO:4

Antisense primer:

5' -A (AG) (AGTC) AC (AG) CA (AG) TT (AGTC) GT (AG) TT (AGT) AT-3' <M-2a>

Please replace the last full paragraph at page 71, with the following rewritten paragraph:

Nucleotide sequence of the plasmid p9T1-2 was determined in the conventional way. The nucleotide sequence which encodes the protein-deamidating enzyme is shown in ~~SEQUENCE NO. 5~~SEQ ID NO:5. Also, amino acid sequence encoded by the ~~SEQUENCE NO. 5~~ SEQ ID NO:5 is shown in ~~SEQUENCE NO. 6~~SEQ ID NO:6. The N-terminal region amino acid sequence (~~SEQUENCE NO. 1~~SEQ ID NO:1) and internal amino acid sequence

(~~SEQUENCE NO. 2~~SEQ ID NO:2) determined in the above step b) were found in this amino acid sequence.

Please replace the heading for the sequence listing, SEQ ID NO: 5, at page 72, with the following heading:

~~SEQUENCE NO. 5~~ SEQ ID NO:5

Please replace the heading for the sequence listing, SEQ ID NO: 6, at page 72, with the following heading:

~~SEQUENCE NO. 6~~SEQ ID NO:6

Please replace the last paragraph beginning at page 72, bridging to page 73, with the following rewritten paragraph:

The open reading frame of this gene is shown in ~~SEQUENCE NO. 7~~SEQ ID NO:7. As shown in ~~SEQUENCE NO. 7~~SEQ ID NO:7, the entire portion is encoded as a prepro protein having 320 amino acid residues, in which N-terminal 135 residues (underlined in ~~SEQUENCE NO. 7~~SEQ ID NO:7) correspond to the prepro region and the remaining 185 residues correspond to the mature protein (cf. ~~SEQUENCE NO. 6~~SEQ ID NO:6).

Please replace the heading for the sequence listing, SEQ ID NO: 7, at page 73, with the following heading:

~~SEQUENCE NO. 7~~SEQ ID NO:7

Please replace the heading for the sequence listing, SEQ ID NO: 8, at page 74, with the following heading:

~~SEQUENCE NO. 8~~SEQ ID NO:8

Please replace the heading for the sequence listing, SEQ ID NO: 8, at page 74, with the following heading:

~~SEQUENCE NO. 9~~SEQ ID NO. 9

Please replace the heading for the sequence listing, SEQ ID NO: 8, at page 74, with the following heading:

~~SEQUENCE NO. 10~~SEQ ID NO. 10

Please replace the heading for the sequence listing, SEQ ID NO: 8, at page 74, with the following heading:

~~SEQUENCE NO. 11~~SEQ ID NO. 11